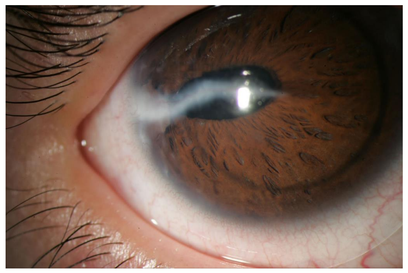
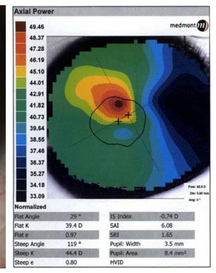
Scleral Lenses as a Treatment Option for Corneal Scarring in a Pediatric Patient

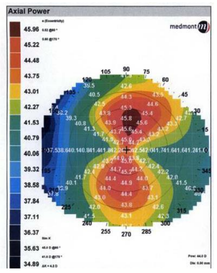
Kelly Voltz, OD, Derek Louie, MSc, OD, FAAO

INTRODUCTION

- An 11-year-old Hispanic male presented for contact lens evaluation for visual rehabilitation of the right eye due to corneal scarring.
- Ocular history was significant for a corneal laceration and ruptured globe repair of the right eye eight years prior. The patient had undergone cataract extraction with vitrectomy, synechiolysis, pupilloplasty, and remained aphakic.
- Corneal scarring through the pupillary axis resulted in irregular astigmatism and anisometropic amblyopia. The patient was being treated for amblyopia with patching therapy up to two hours a day. Systemic history was unremarkable. The patient was not taking any systemic or ocular medications.







Initial Lens Design OD	BC	Power	Dia	Material	Dk
Kerasoft IC	8.6	+9.00-3.75x180	14.5	Efrofilcon A 74%	60

- The patient presented wearing a Kerasoft IC contact lens providing 20/40^{-2} Snellen linear visual acuity. The lens exhibited adequate limbal coverage, 0.5mm of movement in primary and upgaze, and was well centered.
- On slit lamp examination, a linear 7mm horizontal dense corneal scar extended through the pupillary axis. A central perfused vessel extended through the center of the corneal scar also reaching the pupillary axis.

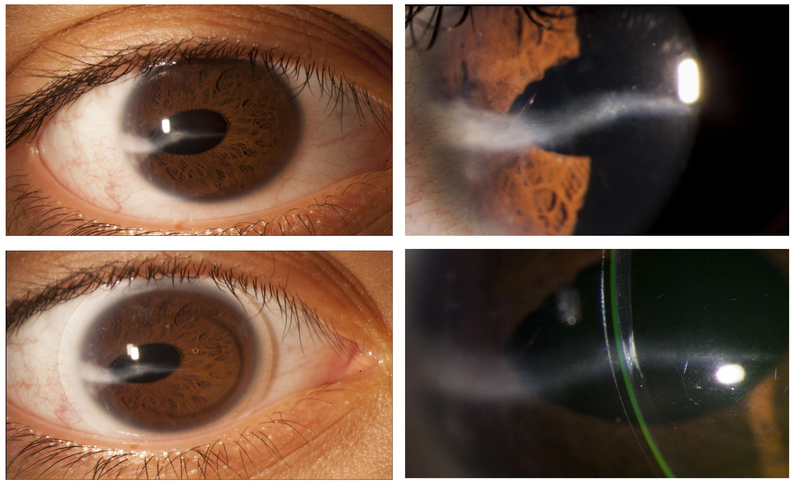
PURPOSE

- To describe scleral lenses as a treatment option for correcting irregular astigmatism and aphakia after corneal laceration and ruptured globe repair in a pediatric patient.
- To show the decrease in neovascularization of a corneal scar after switching a child to a high Dk material contact lens.

RESULTS

- The patient was successfully fit in Valley Contax's Custom Stable Elite scleral lens using a high Dk material (Optimum Extra, Dk 100). The lens exhibited 150 microns of clearance over the corneal scar, 50 microns of limbal clearance, and adequate edge alignment in all quadrants.

Final Lens Design OD	BC	Power	Dia	LCZ	SLZ	Material	Tint
Custom Stable Elite	7.85	+6.00	14.8	2 lite	+6/0	Optimum Extra	Clear



IMPROVED VISUAL ACUITY

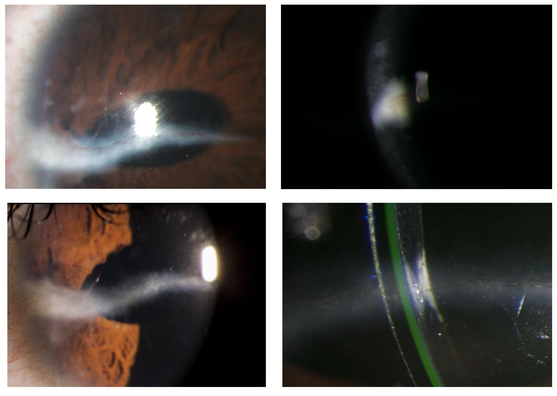
- At the one month follow up visit, Snellen acuity measured 20/40. At the three month follow up, visual acuity improved to 20/25.

IMPROVED NEOVASCULARIZATION

- On slit lamp examination, vascularization of the corneal scar was diminished and a large non-perfused ghost vessel remained.

Neovascularization present in corneal scar (Dk 60 material)

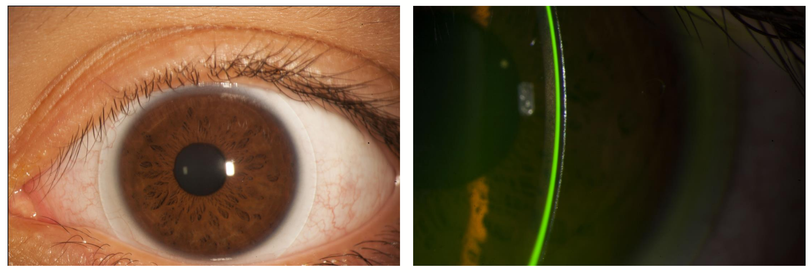
Neovascularization absent in corneal scar (Dk 100 material)



CONCLUSIONS

- Corneal scarring with resulting decreased vision in a pediatric patient challenges the practitioner to provide visual correction to allow for proper visual development during the critical period.
- Scleral contact lenses can serve a dual rehabilitative function in treating resultant corneal scarring in pediatric patients: masking corneal irregularity to optimize vision and reducing anisometropia to aid in the treatment of amblyopia.
- Due to the patient's success in scleral lenses in the right eye, the patient was later fit in a scleral lens for visual correction of compound hyperopic astigmatism in the left eye.

Final Lens Design OS	BC	Power	Dia	LCZ	SLZ	Material	Tint
Custom Stable Elite	7.85	+0.75	14.8	2 lite	+6/0	Optimum Extra	Blue



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ACKNOWLEDGEMENTS

The authors have no financial interest in any of the products referenced in this study, nor were the authors supported by any company referenced in this project. Casey Eye Institute is supported by unrestricted departmental funding from Research to Prevent Blindness (New York, NY) and by grant P30 EY010572 from the National Institutes of Health (Bethesda, MD).

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